

# AMATEUR RADIO

NOVEMBER 1964



Vol. 32, No. 11



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# "AMATEUR RADIO"

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA. FOUNDED 1910.

NOVEMBER 1964

Vol. 32, No. 11

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## Advertising Enquiries:

C/o P.O. Box 36, East Melbourne, C.3, Vic.

Mrs. HELLARDS, Phone 41-3335, 478 Victoria Parade, East Melbourne, C.3, Victoria, Hours 10 a.m. to 8 p.m. only.

## Publishers:

VICTORIAN DIVISION W.I.A.,  
Reg. Office: 55a Franklin St, Melbourne, Vic.

## Printers:

"RICHMOND CHRONICLE" Phone 42-3419,  
Shakespeare St, Richmond, E.1, Vic.

★

All matters pertaining to "A.R." other than subscriptions, should be addressed to:

THE EDITOR,  
"AMATEUR RADIO,"  
P.O. BOX 36,  
EAST MELBOURNE, C.3, VIC.

Acknowledgments will be sent following the Committee meeting on the second Monday of each month. All Sub-Editors should forward their articles to reach "A.R." before the 8th of each month. Any item received after the Committee meeting will be held over until the next month. Publication of any item is dependent upon space availability, but in general about two months may elapse before a technical article is published after consideration by the Publications Committee.

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## OUR COVER

Our interested viewers appear puzzled as to the means by which so much is packed into so little. The unit is one of the Collins Line which, along with many other similar types, has done much to make popular the transceiver type of equipment.

## FEDERAL COMMENT

★

## THE AMATEURS' ROLE IN CIVIL DEFENCE

Before World War II, the Amateur provided the backstay when emergency communications were required. After the war, the Amateur was instrumental in aiding the establishment and training of communication groups in a number of volunteer organisations.

As these organisations progressed and State Instrumentalities set up and expanded their own communications services, the Amateur's role appeared to become less important; however, when the Civil Defence School was established at Mount Macedon, Victoria, investigations by communications study groups soon revealed that the Amateur still had a very important role to play in the early stages of any emergency.

Many Amateurs have passed through the School as representatives of either the W.I.A. or organisations employing them. The importance of this training to the community is inestimable.

The recognition the Government has accorded W.I.A. representatives in this important work is both gratifying and significant.

Each State Premier's Office is allotted a quota for each study group or course. The W.I.A. has always been invited to nominate members for inclusion in the contingent. These study groups embrace every aspect of civil emergency work and thus representatives of every section of the community take part in general discussions; however, specialised studies or courses are held in every field. In these cases every organisation interested in the particular subject is represented.

All that is asked for participants is that they spread the knowledge and experience gained amongst their fellow citizens. In the case of W.I.A. representatives, dissemination is via W.I.C.E.N., the object being to ensure that a maximum number of skilled personnel will be ready to meet any emergency.

Amateurs willing to help in this work should advise their Divisional W.I.C.E.N. Co-ordinator who will arrange for their names to be added to the list of nominees to be forwarded to the Premier's Office. The success of W.I.C.E.N. depends entirely upon the enthusiasm of members.

As an example, the Victorian W.I.C.E.N. group are to participate in a large scale exercise this month. The success of this exercise from an Institute viewpoint is important from the accorded status, but even more so from the aspect of the practical application of the Amateur's knowledge of communications.

FEDERAL EXECUTIVE, W.I.A.

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# AN S.S.B. TRANSCEIVER FOR 52 Mc.

I. F. BERWICK,\* VK3ALZ

A comparison of the block layout for the 52 Mc. Transceiver (Fig. 1) with the original circuit of the PT118 shows that four additional major components are required:

1. A 48 Mc. v.f.o.
2. A 4 Mc. crystal filter.
3. A solid state d.s.b. generator.
4. If mobile operation is intended, a new power supply.

Each of these components is built and aligned as a separate sub-assembly. The order in which they are made is of no consequence and can be done according to availability of components, etc. Be prepared to devote quite a few man-hours to each of these assemblies.

Notes on the circuitry, layout and alignment of each sub-assembly appear later, plus diagrams.

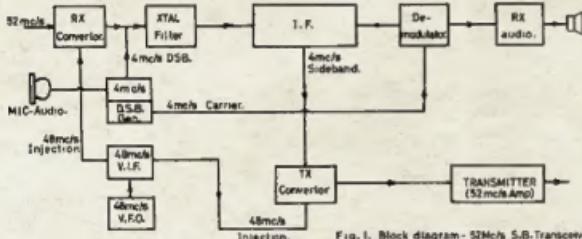


Fig. 1. Block diagram - 52 Mc. S.S.B. Transceiver.

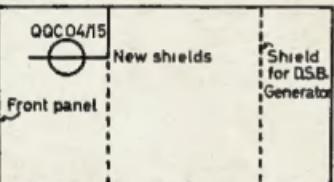


Fig. 2.—Position of New Shields.

The major assembly is the Pye Reporter unit. This is converted as follows:

1. Remove all redundant components and wiring—compare the new circuit with the old for this operation. The following components are redundant:

- (a) Vibrator power supply.
- (b) IFT3.
- (c) IFT1—the can is saved for crystal filter.
- (d) Mike transformer.
- (e) Socket of V10 and its grid wiring.
- (f) Terminal strip for carbon microphone
- (g) Terminal strip for crystal oscillator V4 and crystal oscillator V12—also crystal sockets.

2. Convert IFT2, IFT4, IFT5 to 4 Mc. Remove 100 pF. across each winding and replace with 33 pF. Then replace IFT2, IFT4, IFT5.

\* 107 Leongarra Avenue, Glenroy, Vic.

The author has converted a Pye Reporter PT118 to a 52 Mc. S.S.B. Transceiver. A conversion for any other frequency from 2.5 to 144 Mc. is equally possible.

3. Convert Receiver front-end to 52 Mc. This is done as follows:

(a) Remove coil assembly of L2, L3, L4, re-wind coils with 8 turns 18 B. & S. enamel, wind 2-turn tap at cold end of L3. Tap L4 at 7 turns. Replace assembly.

(b) Remove and re-wind L1 with 9 turns 18 B. & S. enamel. Tap at  $\frac{9}{16}$  turns. Replace L1.

tube. The original shield across the socket will have to be modified to achieve this—additional shielding is added to completely isolate the p.a. tank.

The p.a. loading capacitor, an A.W.A. concentric trimmer with screw-driver adjustment, is mounted on the side wall in the p.a. tank compartment. Wind and install new p.a. coil and loading (link) coil.

Fit a shim brass shield across underneath chassis as shown in Fig. 2.

Mount connectors for mic. input, v.f.o. input, and antenna.

Complete wiring of Reporter unit—running all supply wiring in shielded cable.

Refer to drawings for layout of various components (Figs. 3 and 4).

## CRYSTAL FILTER ALIGNMENT

The performance of the transceiver is critically dependent on this component. I include in some detail two alternative alignment procedures.

Method 1 is the more speedy and accurate method. The test set-up is as per Fig. 5.

With this set-up the filter response curve is viewed directly on the c.r.o. screen. See Fig. 6.

It is now a comparatively simple matter to correctly align the filter.

TR3 and TR4 (Fig. 7) should be resonated at 4 Mc. If the camel hump is not now symmetrical, TR4 should be detuned from resonance slightly, either higher or lower until symmetry is achieved.

R should now be varied to try and further improve the response curve. 47K to 39K should give a satisfactory result.

If it is desired to measure the pass bandwidth proceed as in Method 2.

If a satisfactory response cannot be obtained, check that IFT1 is correctly tuned. If still unsatisfactory, filter will have to be re-built. Proceed as follows:

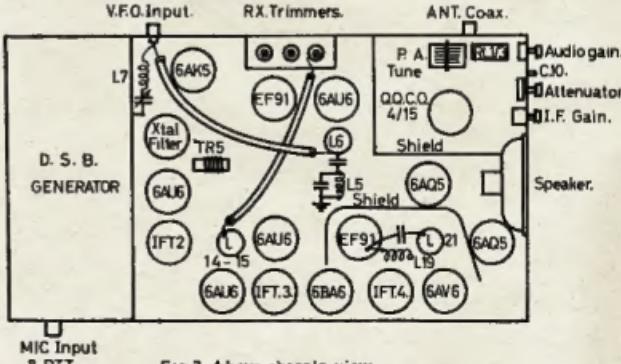


Fig. 3. Above chassis view

Dismantle filter, check pole-zero spacing of each crystal. Measure pole frequencies. There should be two  $f_1$  crystals ( $\pm 50$  c.p.s.) and two  $f_2$  crystals, where  $f_1 - f_2$  = pole-zero spacing.

If not, crystals will have to be shifted around until this is so—either by etching or grinding. Frequency can be lowered if desired by rubbing a little solder onto the quartz. Re-build filter when crystals are OK and repeat alignment procedure.

For the average FT243 filter a response of 3 kc. at 6 db. down and 12 kc. at 60 db. is considered satisfactory with passband ripple not exceeding 3 db.

**Method 2:** Test set-up as per Fig. 8. Proceed as follows:

(1) Assuming d.s.b. has been previously aligned, insert carrier by unbalancing VR1 (Fig. 16, d.s.b. gen)—a smooth stripe should appear on c.r.o. screen (audio generator should be off). Peak TR3, TR4 for maximum stripe width.

(2) Remove carrier, inject audio signal (1,000 c.p.s.). If filter correct a nearly smooth stripe should appear. If not, carrier and/or unwanted sideband are present, as Fig. 9.

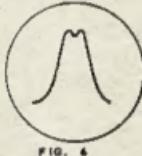


FIG. 6

It is now possible to measure (a) the pass-band response by plotting stripe height in inches or volts (if the c.r.o. is calibrated) against frequency, using  $db. = 20 \log E_1 + E_2$ , where  $E_1$  is the maximum stripe height; (b) the stop-band response by plotting stripe ripple against frequency, using  $db. = 20 \log E_1 + E_2$ , where  $E_1$  and  $E_2$  are as in Fig. 10.

When a picture of the response curve is obtained by this method, the necessary adjustment of TR4 and R can be made to complete the alignment of the filter.

In this discussion no mention has been made of the frequency of the carrier crystal relative to the filter. In v.h.f. it is usual to use upper sideband.

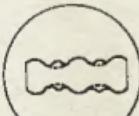


FIG. 9A  
1 Sideband + carrier

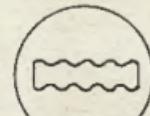


FIG. 9B  
2 Sidebands no carrier

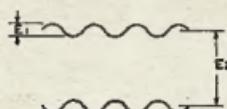


FIG. 10.

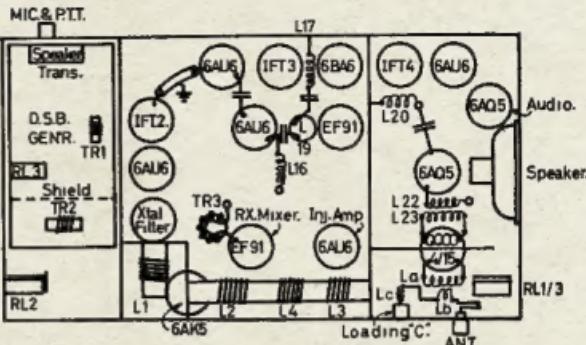


Fig. 4. Under chassis view.

FIG. 5.

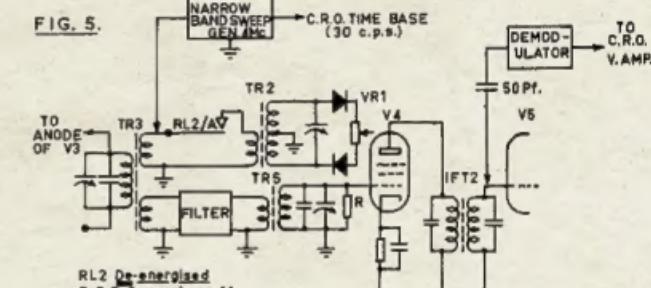
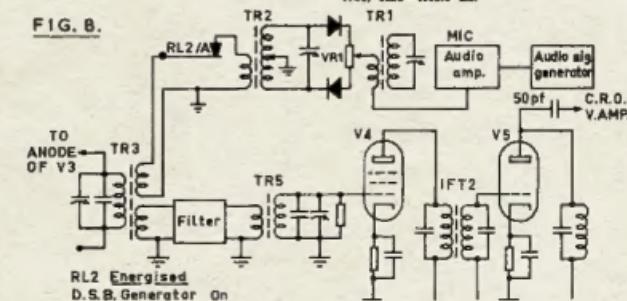


FIG. 7. Xtal Filter & IF

All bi-passes 2.2K pF. unless otherwise stated.  
C—Philips trimmer.  
TR4—18 turns 18 B. & S. enamel on Q3 toroid (Duxon).  
X1, X2—4000.0 kc.  
Xb1, Xb2—4003.0 kc.

TR5—Primary: 4 turns 18 B. & S. enamel; Secondary: 14 turns 14 B. & S. on Q2 toroid.



It is the practice, therefore, to set the carrier frequency 20 db. down the i.f. skirt of the filter.

This occurs usually when the pole of the carrier crystal is approx. 400 c.p.s. lower than the pole of the i.f. crystals in the filter.

The carrier crystal should be ground to this frequency (i.e.  $f_c = 400$ ) and the alignment as described carried out.

If the tests indicate that a shift in carrier crystal is desirable, this may be done at any time after the alignment of the filter.

#### Alignment Pictures

Method 1—Fig. 11:

- A—TR4 not correctly tuned, unsymmetrical, hump, stop-band pop-up.
- B—TR4 tuned too far in other direction.
- C—TR4 correctly tuned, but R too large.
- D—Correct response, TR4 OK, R OK.



FIG. 11A



FIG. 11B



FIG. 11C



FIG. 11D

Method 2—Fig. 12:

- A—Smooth stripe, carrier only.
- B—1,500 c.p.s. sideband, ref. level 0 db., suppression of unwanted sideband = 25 db., carrier suppression 50 db.
- C—500 c.p.s. sideband, ref. level  $-6$  db., s.b. suppression  $\sim 10$  db., carrier suppression 50 db.
- D—3,000 c.p.s. sideband, ref. level  $-6$  db., s.b. suppression 35 db., carrier suppression 50 db.

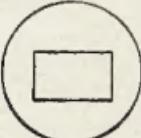


FIG. 12A

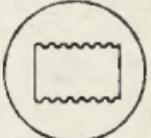


FIG. 12B

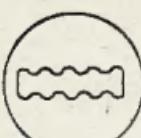


FIG. 12D

#### V.I.F.s.

I propose to make a few remarks introductory to this important subject. I hope to make a further discussion at a later date in connection with a 144 Mc. s.b. transceiver I am developing.

A v.i.f. (variable i.f.) is a device which passes a signal tuneable over a specified range without appreciable attenuation, but highly attenuates all other signals outside this range.

Spurious signals from the injection sources which fall in the v.i.f. and pass through unattenuated are called crossovers. A very important aspect of v.i.f. design is reduction of cross-over energy. V.i.f.s. may be divided into four basic types—

- (1) Mechanically or electrically ganged to v.o.
- (2) Bandpass.
- (1) and (2) are further sub-divided into (a) injection v.i.f., (b) signal (or s.b.) v.i.f.

I have used type 2a in my transceiver.

I state without proof the rules for v.i.f. design—

(1) V.i.f. tuning range (or bandwidth) should be minimal contingent upon other design factors, e.g. 200 kc.

(2) The amplitude of a spurious cross-over is an inverse function of its order. Therefore spurious cross-overs should be of high order.

Example: If  $f_{\text{VIF}} = f_{\text{VFO}} + N f_{\text{VIF}}$  and  $f_{\text{sp}} = f_{\text{VIF}}$ , where  $f_{\text{VIF}} = R f_{\text{VFO}} - S f_{\text{VIF}}$ ,  $f_{\text{sp}}$  is said to be of order  $R + S$ . For small energy at  $f_{\text{VIF}}$ ,  $(R + S)$  should be large. Note:  $R, S, N$  are integers.

(3)  $f_{\text{VIF}} + f_{\text{VFO}}$  should not be integers, or if  $f_{\text{VIF}} + N f_{\text{VIF}}$  are integers, should be large, i.e.  $> 3$ .

Readers requiring further information at this stage should consult Collins S.B. Handbook.

It will be seen that in my transceiver tuning range is somewhat greater than is customary, but choice of v.i.f., v.o. and crystal are good so that this factor is less serious than it might have been.

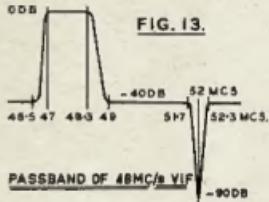


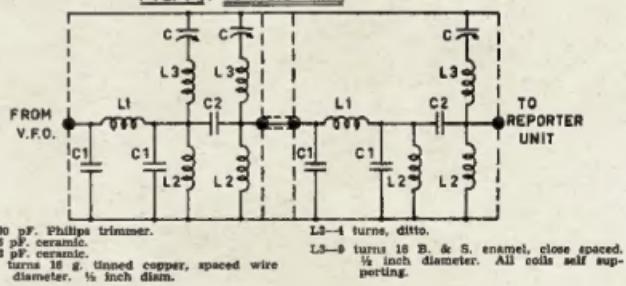
FIG. 13.

Fig. 13 shows the pass-band characteristic of the 48 Mc. v.i.f. This v.i.f. consists of two low pass constant K sections, cut-off 49 Mc., plus two high pass constant K sections, cut-off 46.5 Mc., plus shunt traps to give a notch at 52 Mc. (See Fig. 14.)

#### 52 Mc. TX SECTION

This is explained by reference to the circuit of Fig. 15. A top coupled filter is used between 6AU6 mixer and EP91 class A. This, in conjunction with an absorption trap, prevents the 48 Mc.

FIG. 14. 48 MC/S V.I.F.



C—3-30 pF. Philips trimmer.

C1—55 pF. ceramic.

C2—33 pF. ceramic.

L1—3 turns 18 g. tinned copper, spaced wire diameter, 1/8 inch diam.

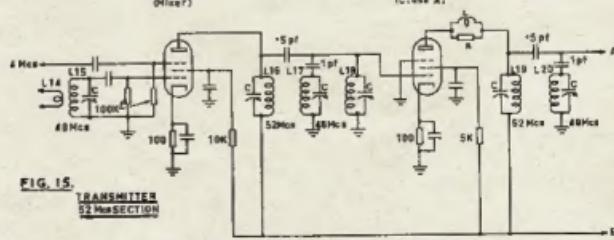
L3—4 turns, ditto.

L5—8 turns B. & S. enamel, close spaced,

1/8 inch diameter. All coils self supporting.

SALES  
(48 Mc/s)

EP91  
(Class A)



All by-passes 14 pF. ceramic unless otherwise specified.

C—3-30 pF. Philips trimmer.

CN—Philips trimmer, cut down to two plates (1 fixed, 1 moving).

R, L—5 turns 22 B. & S. wound on 47 chum 1/8-watt carbon resistor.

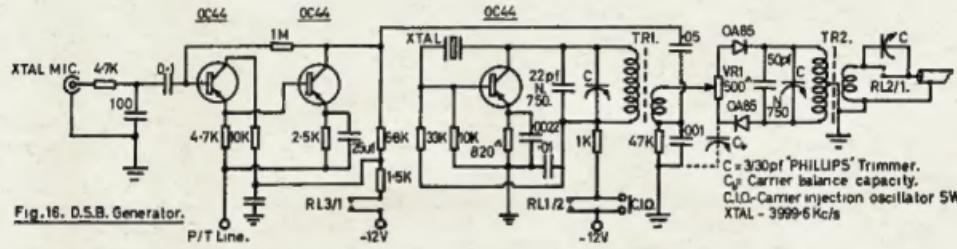
Ls—10 turns 14 g. tinned, 1/8 inch diam. c.t.

Lb—2 turns 14 g. tinned, 1/8 inch diam. Lc—4 turns 18 g. enamel, 3/8 inch diam.

injection voltage from appearing at the EF91 grid and driving this stage into non-linearity. A similar circuit arrangement is used between EF91 and 6AQ5, the 6AQ5 being neutralised. Parasitic chokes are fitted in the anodes of the EF91, 6AQ5 and QQC04/15.

The final anode tank is designed to match a 50 ohm load to a 12,000 ohm plate-to-plate impedance.

Alignment of this section is straightforward. All tanks are grid-dipped to the appropriate frequencies. Neutralise the 8AQ5 according to accepted practice, peak the 52 Mc. coils for maximum drive at 52.5 Mc., adjust the traps for minimum 48 Mc. feedthrough, and carry out linearity checks of the final according to the approved procedure.



**Fig.16. D.S.B. Generator**

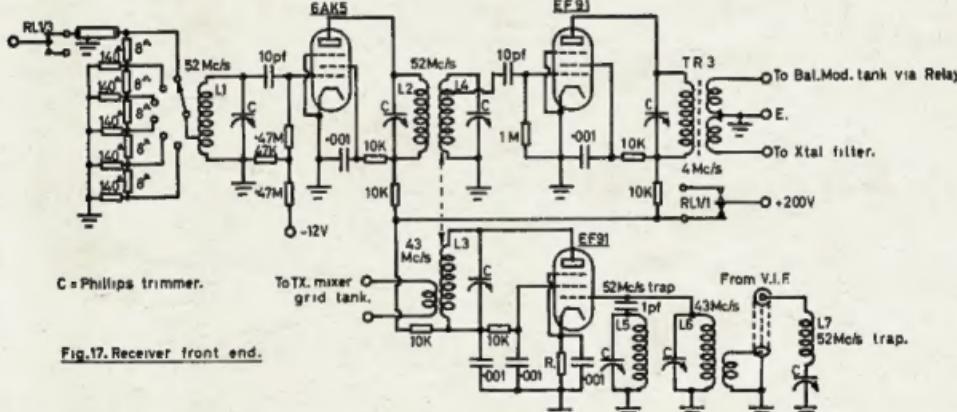


Fig-17. Receiver front end.

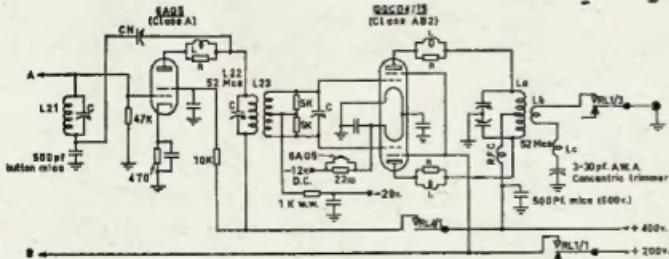


Fig. 16. Parts List.

D1, D2—OAS6s.  
Q1, Q2, Q3—OC44.  
TR1—Primary: 14 turns 14 B. & S.; secondary:  
4 turns 18 B. & S.  
TR2—Primary: 14 turns 14 B. & S. c.t.; sec-  
ondary: 4 turns 18 B. & S. Both TR1

1976, 1977, 1978, 1979)

FIG. 17 Paris List  
 All by-passes are 10 kpf. ceramic.  
 C—Philips trimmer.  
 R1—8 ohms, carbon.  
 R2—140 ohms, carbon.  
 LI—1.5 turns B. & S., tapped 1.5 turns.  
 L3, L5, L4—8 turns 18 B. & S. tapped at  
 7 turns. Wind two-turn link at cold  
 end of L3.  
 TBA—Primary 14 turns 18 B. & S.; Secondary  
 24, 24 turns 18 B. & S. each. Core  
 1" x 1" x 1".

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Check carrier balance, the potentiometer is the coarse balance control and the capacitor the fine control. It will be necessary to find by experiment across which arm of the balanced modulator the capacitor should be placed. 40 db. carrier suppression should be achieved without difficulty. (Remember that a further carrier attenuation occurs in the filter.)

Check double sideband output in the receiver or c.r.o. for intermodulation distortion. Linearity should be satisfactory if the operating conditions for diode balanced modulators are adhered to.

#### RECEIVER FRONT-END

Concurrent with modern practice, a stepped attenuator is incorporated. This is mounted on the front panel. The speaker transformer has to be shifted to the rear side wall to make room for this. The 48 Mc. injection amplifier 6AU8 runs all the time. The h.t. to

tion is injected into the i.f. after the mixer.

This is achieved as follows: When RL2 is de-energised during receive, thus removing the load from the bal. mod. tank, the balanced modulator becomes unbalanced. A Philips trimmer wired across the contacts of RL2 provides a means of adjusting the level of carrier injected into the i.f.

Carrier derived a.g.c. is shown on the circuit (Fig. 18). An audio derived a.g.c. system on a matrix board sub-assembly is available for fitting, this is not shown as most people seem to have their own preferences with respect to a.g.c. systems.

#### 48 Mc. V.F.O.

This is constructed as an outboard unit designed for mounting on the steering column of a motor vehicle. The 5 Mc. v.f.o. is a modified Command unit. The heterodyning section and the 48 Mc. v.i.f. are mounted in separate

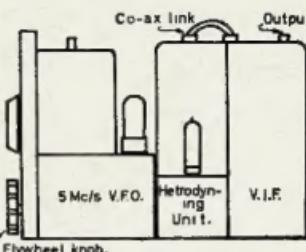


Fig. 19. 48 Mc/s V.F.O. (side view)

shielded compartments at the rear of the modified Command unit. (See Fig. 19.)

The modification to the Command unit is as follows:-

- (1) Remove all wiring under chassis.
- (2) Remove front panel, disconnect bowden drive to oscillator capacitor.
- (3) Cut through chassis in a line with front of oscillator capacitor.
- (4) Mount front panel on the oscillator portion of the chassis so that the tuning gears line up with the oscillator capacitor drive gear.
- (5) Wire up as per circuit (Fig. 20). The oscillator is a Franklin followed by a cathode follower and then a class A tuned stage.
- (6) Fit a large flywheel tuning knob.

The construction of the heterodyning unit and v.i.f. is straightforward and the diagrams should be self explanatory. Note that these stages run all the time.

(Continued on Page 8)

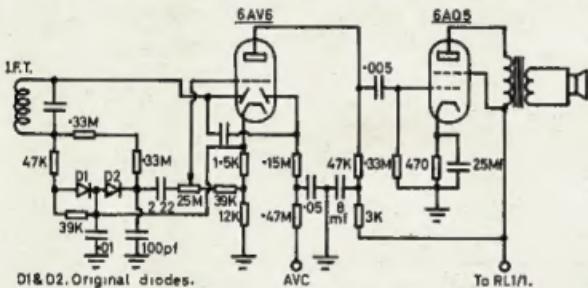


Fig. 18. Receiver noise limiter - demodulator & audio amplifier.

the 6AK5 and EF91 is removed by RL1/1 during transmit, so disabling these stages. See Fig. 17.

The first two i.f. stages run at constant gain at all times. The third i.f. stage has both manual and automatic gain control.

The manual gain potentiometer is mounted on the front panel as follows: Remove top right hand speaker mounting screw, drill a 3/8-inch clearance hole, using the old mounting hole as centre. Mount miniature 10K potentiometer in this hole.

#### NOISE LIMITER, DEMODULATOR AND AUDIO AMPLIFIERS

This section (Fig. 18) is largely unchanged from the original Reporter circuitry. Carrier for s.b. demodulation

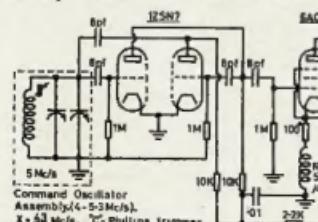


Fig. 20. 48 Mc/s V.F.O.

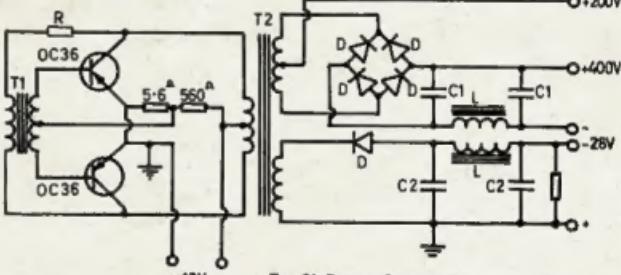


Fig. 21. Power Converter.

# FURTHER NOTES ON WINDING TRANSFORMERS

In his article, "Re-winding Transformer" ("A.R.", Sept. 1964), Ian Phillips has stated a way to determine the turns per volt of the windings. I do not wish to be unkind, but his method is misleading.

The turns of a 5 or 6.3 volt winding are not necessarily a multiple of 5 or 6 respectively. A power transformer is designed to give correct heater voltages on load (all windings normally fully loaded).

The following factors are taken into account to arrive at the t.p.v.—

Flux density (core loss),  
Wire gauges (copper loss),  
Increase in wire resistance with temperature rise,

The final estimated working temperature above ambient. These determine the transformer "regulation".

A typical design of about 100 to 150 watts rating would probably use a core of the E and I waste-free type, either a 1½" centre leg and 2" stack, or 1½" centre leg and 1½" stack. Core material is a matter of size and temperature rise, and can vary accordingly.

However, to get to the point, the heater winding voltages *off load* and therefore the turns depend on the factors stated earlier. This may be seen from the figures given in Table 1, and the same applies to other core sizes and areas.

Core Leg X Stack (Inches)	Appr. Net Area (Sq. In.)	T.P.V. for Flux in Kgausses*		
		10	11	12
1½ X 1½	2.1	3.3	3	2.75
1½ X 2	2.3	3	2.75	2.5
Turns 5v. wdg.	→	18	16	15
	2.1	(5.46)	(5.32)	(5.46)
Turns 6.3v. wdg.	→	22	20	19
	2.1	(6.67)	(6.68)	(6.9)

Table 1.  
Figures in brackets are typical "off-load" voltages.

\* Multiply by 6.45 for K lines/sq. in.

It will be seen that a winding of 18 turns could be a 5v. or 19 turns a 6.3v. winding. Therefore, with a faulty transformer, it is a little difficult, if not impossible, to arrive at the t.p.v. If not faulty, the turns of the heater winding divided by the off-load volts will give the t.p.v. provided the correct voltage is applied to the primary, and the meter is reasonably accurate. (All secondary windings unloaded.)

The only other way is to assume a normally used flux density, e.g. 11 Kgausses or approx. 70,000 lines, and the t.p.v. is near enough to 6.8 divided by the cross-section area in square inches as measured with a rule. This gives you a fair chance of being "near the mark" or can be used for a complete re-wind.

—Andy Roudie, VK3UJ.

## S.S.B. TRANSCEIVER

(Continued from Page 7)

### POWER CONVERTER

A suitable power unit is shown in Fig. 21.

T1: primary 100 turns c.t., 16 B. & S. secondary 50 turns c.t. of 22 B. & S. Core: Ducon Q1 toroid.

T2: primary 62 turns c.t., 16 B. & S. secondary 1, 600 turns c.t., 26 B. & S.; secondary 2, 100 turns, 26 B. & S. Core: Permalloy C core, 100 v.a. rating. Note: Core from APX-1.

A suitable control unit is shown in Fig. 22.

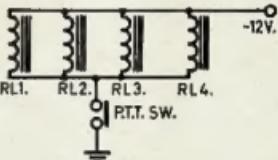


Fig. 22. Control circuit.

### CONCLUSION

A complete transceiver has been described. Enough information has been presented to enable a transceiver to be designed for any frequency—3.5 to 144 Mc.—using Reporter components.

By building one's own along the lines indicated, it is possible to enjoy the advantages of transceiver operation at a small fraction of the cost of commercial units.

Finally I am indebted to VKs 3AHL, 3ADF and 3ZCZ for numerous suggestions which have proved invaluable during the development of this unit. •



### D.X.C.C. CONTEST

"All the DX you can work in a year" is the object of the First Annual D.X.C.C. Contest being sponsored by the Long Island DX Association in order to stimulate DX activity throughout the world.

The Contest will begin at 0001 G.M.T., 1st January, 1965, and end at 0000 G.M.T., 31st December, 1965. Contestants will be required to work as many different countries as possible in order to be eligible for the special prizes which will be offered by the L.L.D.X.A. Any mode and any band may be used. Each entry will be confirmed from each country worked. Contestants will be based on A.R.R.L. D.X.C.C. rules and the A.R.R.L. Countries List will be followed.

The prizes to be awarded to the winners include the Long Island DX Association Trophy, going to the top scorer in the world; six unique trophies will be awarded to the top scorer in each of the six continents; and individual certificates to be awarded to the top scorers in each country from which entries are submitted as well as winners in each of the U.S.A., Canadian and Australian districts.

At the close of the Contest, participants will be required to submit just their lists of confirmed countries worked to "L.L.D.X.A. Contest," P.O. Box 599, Lynbrook, N.Y., with postmarks no later than February 15, 1966. Postage will be paid. All entries will be requested to submit all the QSLs from the Contest Committee whose members are: Joe Hellman, W1MES; Dorothy Struber, KEMGE; Wm. Tomez, WA2QWV; and Marc Prickett, W2PGD. A certificate of winners will be published as soon as the Contest has completed the tabulation of the entries. For any additional information, contact the L.L.D.X.A. Contest Committee members via P.O. Box 599, Lynbrook, New York.

—VK4SS

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# ROSS HULL MEMORIAL V.H.F. CONTEST, 1964-65

The Federal Contest Committee of the Wireless Institute of Australia invites all Australian and Overseas Amateurs and Short Wave Listeners to participate in this annual Contest which is held to perpetuate the memory of the late Ross Hull whose interest in v.h.f. did much to advance the art.

A handsome Perpetual Trophy is awarded annually for competition between members of the W.I.A. in Australia and its Territories, inscribed with the name and life work of the man whom it honours. The name of the winning member of the W.I.A. each year is also inscribed on the Trophy. In addition, this member will receive a suitably inscribed, framed photograph of the Trophy.

**Objects:** Amateurs in each VK Call Area will endeavour to contact Amateurs in other Australian Call Areas and Overseas.

**Date of Contest:** 12th December, 1964, to 10th January, 1965.

**Duration:** From 0001 hours E.A.T. (1401 hours G.M.T.) on 12/12/64 and 11/12/64 respectively, to 2359 hours E.A.T. (1859 hours G.M.T.) on the 10/1/65.

## RULES

1. There shall be three main sections to the Contest:

- (a) Transmitting, Open, 52 Mc. and higher.
- (b) Transmitting, Phone, 52 Mc. and higher.
- (c) Receiving, Open, all bands, 52 Mc. and higher.

2. All Australian and Overseas Amateurs may enter for the Contest whether their stations are fixed, portable or mobile.

3. All Amateur v.h.f. bands may be used, but no cross-band operating is permitted.

4. Amateurs may enter for any one of the transmitting sections. All contacts must be consecutively numbered in the one number sequence to facilitate checking.

5. Only one contact per band per station is allowed each calendar day.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a contestant and must submit a separate log under his own call sign.

7. Entrants must operate within the terms of their licences.

8. **Cyphers:** Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of 5 or 6 figures will be made up of the RS (telephony)

or RST (c.w.) report plus three figures commencing from 001 for the first contact and will increase in value by one for each successive contact. If any contestant reaches 999 he will start again with 001.

9. Entries must be set out as shown in the example, using only one side of the paper. Entries must be postmarked not later than one month after the Contest (i.e. not later than 10/2/65) and be clearly marked "Ross Hull Memorial V.H.F. Contest, 1964-65," and addressed to the Federal Contest Committee, W.I.A., Box 633J, G.P.O., Brisbane, Queensland.

10. Scoring for all sections will be based on the attached sections. Contestants will have to agree between themselves as to the distance between their stations. Such distances must be shown in their log entry in the column usually used for remarks or bonus points.

11. **Logs:** All logs shall be set out as in the example and in addition will carry a front sheet showing the following information:

Name ..... Call Sign  
Address ..... Section  
..... Claimed Score

**Declaration:** I hereby certify that I have operated in accordance with the Rules and Spirit of the Contest.

Signed

Date

**Note:** Entries on the front sheet must be clearly shown in block letters.

12. The right is reserved to disqualify any entrant who, during the Contest, has not observed the regulations or who has consistently departed from the accepted code of operating ethics.

13. The ruling of the Federal Contest Committee of the W.I.A. will be final. No dispute will be entered into.

14. **Awards:** Certificates will be awarded to the winners of each section in each VK and Overseas Call Area. The VK contestant who returns the highest score in the transmitting sections and who is a financial member of the W.I.A. will hold the Trophy until the next Ross Hull Contest is decided, and in addition will receive an appropriately inscribed photograph of the Trophy.

## GENERAL

Several suggestions were received regarding the duration of the Contest being too long. It was suggested that the period of the Contest remain the same, but that contestants submit a

log for a seven or nine-day period of the Contest. This period would be selected by the individual contestant. Before taking any steps in this direction we would like to have a much wider expression of opinion on this matter and comments are invited.

It is suggested that contestants obtain a large scale map of Australia and of their State and mark on these maps the radial distances from their location in accordance with the scoring table.

## SCORING SECTION

1. Short Wave Listeners in Australia and Overseas may enter for the Contest, but no transmitting station may enter.

2. Contest times and logging of stations on each band are as for the transmitting sections.

3. To count for points, logs will take the same form as for transmitting sections but will omit the serial number received. Logs must show the call sign of the station heard (not the station worked), the serial number sent by it, and the call sign of the station being worked.

Scoring will be on the same basis as for transmitting stations. It is not sufficient to log a station calling CQ.

4. A station heard may be logged only once per calendar day on each band for scoring purposes, but additional reports will be of value to the F.C.C.

5. **Awards:** Certificates will be awarded to the highest scorer in each VK and Overseas Call Area.

## SCORING TABLE

Distances Between Stations	52 Mc.	144 Mc.	420 Mc.	576 Mc.	Higher a
Up to 10 miles					
Over 10 and up to 25 miles					
Over 25 and up to 50 miles					
Over 50 and up to 100 miles	4	2	20	20	
Over 100 and up to 200 miles	10	4	30	30	
Over 200 and up to 300 miles	20	10	40	40	
Over 300 and up to 500 miles	10	18			
Over 500 and up to 1,000 miles	2	30			
Over 1,000 and up to 5,000 miles	10	40			
Greater than 5,000 miles	20	50			

## EXAMPLE OF RECEIVING LOG

Date/ Time	Band	Station Heard	RST/N.R. Sent	Station Called	Points Claimed	Blank

NOTE.—State whether Time is E.A.T. or G.M.T.

NOTE.—State whether Time is E.A.T. or G.M.T.

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Crystal Calibrator	£12½	12v. d.c. "Topaz" p. sup. £55
Vox Unit	£16	240v. a.c. power supply £30

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# SIGNALS SERVICE COURSE

Held at Macedon, Vic.

The No. 2 Signals Service Course, held at Macedon, Vic., from 6th to 11th September, was attended by 30 members, 20 of these were Amateurs.

Present were: P. A. Alexander (VK2PA), J. B. Battwick (VK3JOR), K. V. Benwell (W.A.), L. Blagbrough (VK4ZGL), S. Briggs (VK4SC), T. I. Cairnduff (Tas.), G. C. Casboult (Tas.), Major E. Collett (VK2RU), H. P. Fuller (VK3TF), M. W. German (VK4ZGM), R. G. Harris (VK5RR), R. H. Hildred (VK4RE), Sergeant R. G. Holdway (Qld.), T. A. Holmet (Vic.), P. B. Jackson (VK2ZP/T), C. E. Love (N.S.W.), M. J. McDonald (VK5MM), M. M. McGrane (VK4MZ), B. A. McRae (VK5MC), P. L. Mahan (VK3AOY), L. A. Maschette (VK6ZDM), D. E. Melbourne (VK2NK), G. A. Middleton (VK5GO), R. A. Murphy (VK5ZDX), M. J. Owen (VK3ZEO), Rev. Bro. T. Radcliffe (N.S.W.), R. V. Saunders (N.S.W.), Major R. L. Topp (VK3QT), B. E. Wearne (N.S.W.), E. W. West (W.A.). It is the first time that a course has been attended by so many people with hobby as a common bond. The others are all connected with communications in some form or another.

The purpose of the course is to instruct the members of the duties of Signals Officers for the Civil Defence Services in Australia.

A background of nuclear, biological and chemical warfare was given.

Message writing, field telephones and cable laying, signal centre duties and records, raising and training personnel, radio procedure and exercises, and planning radio exercises were covered by the course.

One of the major factors evolved from this course was that no matter what form of communications you are using, the procedure in message handling must be standardised, so that confusion does not arise. A badly controlled and confused communication system is worse than no communications at all!

With the development of Civil Defence in the various States, Amateurs may be required to assist in the train-

ing and operating Civil Defence Signals Sections. We must attempt to get the most from our members who are attending these courses and there will no doubt in the future be others attending similar courses.

We all know that communications are the backbone of any service, be it private, public or civil. These Amateurs and the others are doing their best to prepare for natural and other disasters. What are you doing? Contact your local W.I.C.E.N. Co-ordinator and offer your services.

—Alyn Maschette, VK6ZDM.

## NEW CALL SIGNS

JULY, 1964

VK1AXX—J. W. Hutchinson, C/o. Department of External Affairs, Administrative Office, Parkes, A.C.T.

VK1EM—E. J. Mulholland, Flat 11, Block 14, Northbourne Flats, Braddon, A.C.T.

VK1UU—G. A. Sangster, 23 Hollis Ave., Goulburn.

VK2ZFD—C. B. Boundy, 201 Kennedy St., Armidale.

VK2ZFK—W. P. Alpin, Bankia St., Orange.

VK2ZFK—H. Bowden, 49 The Grove, Murrayside.

VK2ZJ—A. J. Jones, 16 McAlister Ave., Engadine.

VK2ZMM—J. P. Mack, 78 The Crescent, Cheltenham.

VK3LL—M. W. Busch, 72 Good St., Bairnsdale.

VK3LA—J. Cutts, 648 High St., Kew.

VK3AV—N. O. Duncan, 13 Kenby Rd., Heathmont.

VK3AN—Geelong Radio and Electronics, Guild Hall, Myers St., Geelong.

VK3ZCN—F. J. Leversha, Birrour.

VK4ZLL—L. Labruyere, 187 Warry St., Fortitude Valley.

VK4ZP—W. Spring, St. Leo's College, St. Lucia.

VK4ZTT—T. C. Thompson, Boys' Grammar School, Rockhampton.

VK5PA—E. F. Braddon, C/o. Dpt. of Civil Aviation, Canberra.

VK5UJ—J. S. Burns, 4 Arthur St., Whyalla.

VK5QM—M. W. Higgins, 15 Beta Cres., Panorama.

VK5ZBS—O. Downing, 4 Bella St., Gawler East.

VK5ZDA—D. M. J. Bates, 22 Alison Ave., Kilkenny.

VK5ZJD—J. E. R. Dunkley, 54 Radstock St., Kilkenny.

VK5ZOF—C. Adams, 22 Shepherds Hill Rd., Eden Hills.

VK5ZQ—G. J. Armstrong, C/o. Station SWA, Wagin.

VK5ZEM—E. M. McDonald, Station: Mumhools Farm, Williams; Postal: P.O. Box 47, Williams.

VK5ZJ—D. Dennis, P.O. Box 61, Rabaul.

VK5UPL—G. Porter, C/o. Eng. Branch, Posts and Telegraphs, Port Moresby.

## R.S.G.B. 21-28 Mc. TELEPHONY CONTEST—DECEMBER 5-6, 1964

Radio Amateurs throughout the world are again invited to take part in the annual R.S.G.B. 21-28 Mc. Telephony Contest to be held this year on December 5, and end at 0700 G.M.T. on Saturday, December 6, and end at 0700 G.M.T. on Sunday, December 6, 1964.

The Contest is open to licensed Amateurs in all parts of the world.

Contacts may be made using any telephony system for which the entrant is licensed. Only one contact on each band may be made with a specific station, whether fixed, portable, mobile or alternate address. Duplicates must be logged and clearly marked as duplicates without claim of points.

**Contest Exchange:** An exchange of R/S reports followed by a three figure serial number starting with 001 for the first contact and increasing by one for each successive contact.

Entries (a) should be clearly typed or written in ink, side by side, in the following order: (i) Date/Time (G.M.T.); (ii) Call Sign of Station Worked; (iii) Name of Station Worked; (iv) Band; (v) Distance in miles; (vi) Country or continent (c) must be addressed to the Contest Committee: Radio Society of Great Britain, 22 Little Russell St., London, W.C.1, England, the name of the Contest being clearly shown on the top left hand corner of the card.

Rule 5. Scoring: Overseas stations may only claim points for contacts with British Isles Stations (G, GB, GC, GD, GI, GM and GW). Overseas scoring will be as follows: Each completed contact with a British Isles station will be worth 1 point. In addition, a total of 35 points may be claimed for the first contact with each British Isles country-numeral points on each band. A further 50 bonus points will be scored for every ten stations worked in each of the above categories irrespective of band.

Certificates will be awarded to the leading station in each VK call area.

The usual cover sheet and declaration must accompany each log.

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12" diameter 1/4 sheet

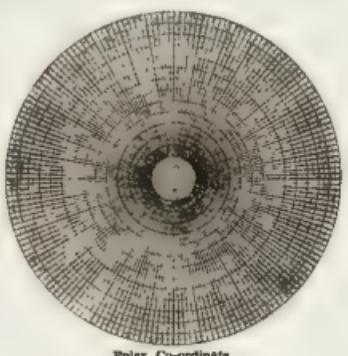
Smith's Chart 5d. sheet

**Power Emission Graph** 4d. sheet

**Reactance Frequency Graph** 4d. sheet

**Radio Rcvr. Performance Graph** 4d. sheet

3 Cycle Semi Logarithm









# SWL

Sub-Editor: Chas. Abernethy, WLA-L2211  
39 Urunga Parade, Miranda, N.S.W.

## TIT-BITS FROM THE

In QSLing to a broadcast station even the most modest information, like, "I heard your station, please send me a card," will nearly always receive a speedy return of anything from a card to the original question until the sun goes down. SWL'ing is easy as stations want your name to boost their known listening audiences.

The same is not the case when replying to an Amateur. A report like "I heard you working my neighbour last night, please send me a card" will not get very far. Your details must be modest. They must be of some use to that Amateur. If the average S.W.L. has a return better than 5% of the number sent out, he is lucky. Cards cost money, so be on the ball with every relevant detail and your returns may improve.

The same is not the case that the VK7 group had disbanded through lack of support. If there are not enough members to keep the group going for meetings, how about someone keeping the issue of S.W.L. numbers alive?

Well yes another year is drawing to a close. Don't forget the Ross Hall R.D. Contest next month. It's been a long time since I heard of the Hall but was an Australian but spent much of his later life in America. A tireless worker with the A.R.R.L. "QST" and the Handbook and many activities both in and out of Amateur Radio. He made his untimely death by being electrocuted from the high voltage supply of a t.v. set on the night of 13th Sept., 1958.—Tim, LS352/2ETM.

## FREQUENCY AND WAVELENGTH

Continued.

How engineers define the word frequency is by the number of complete waves or cycles of the particular signal which would pass a given point in one second, hence the term cycles per second.

But why talk about cycles-per-second when there are more convenient terms available. Remembering that 1,000 cycles is equal to 1 kilocycle, we can express the frequency of the wavelength quoted as 1,000 kc. per second or simply 1,000 kc. To take the abbreviation one step further, it can be expressed as 1 megacycle per second, 1 Mc.

From all this we can derive a simple formula. To convert wavelength in metres to frequency in kilocycles, simply divide into a figure of 300,000. The formula works both ways, so if you divide frequency into kc. into 300,000, you get wavelength in metres. Finally, one megacycle is equal to 1,000 kc., and that is equal in turn to 1,000,000 cycles.

For convenience of reference, the radio frequency spectrum is divided into bands. The 40m. band is the average experimental band, the medium and high frequency bands. These bands cover from 300 to 3,000 kc., and from 3,000 kc. to 30 Mc. respectively. The familiar broadcast band lies within the first mentioned band, and the 160m. band. The 40m. band is really the high frequency band, the major International short wave stations collecting at various spots.

## NEW SOUTH WALES

In the steady increase of members to our meetings continues, then our committee will be rewarded for their effort to revive interest over the past twelve months. It is certainly gratifying for the chaps who come along each month to see the new faces appearing, and we trust that the R.D. Contest continues to grow.

Now, LS352/2ETM is busy excavating for the erection of his tower, which by now should be on the way up. Sorry that you missed the R.D. Contest, but holidays are important as well as meeting our new country.

Ray, LS224, sends word of having logged FRS, V.H.F., 160m., 40m., 20m., 15m., 10m., CW, FSK, U.W., and SM3 with QSLs from YN1AH and VK1QZQ. Nice going Ray.

Don, LS2022 was in Sydney during September, but owing to a mishap could not get along to our meeting to have missed the chance to have met you OM.

Ray Bergmeier: I trust that my reply was to your satisfaction and the pamphlets were of some value. If I can be of help at any time just drop a letter to me.

Sid, LS228 has had rx trouble, but is once again back in business. Many thanks for your continued assistance re this page, it has been much appreciated.

Mac, LS3074 has words with me once a week over the blower, and I would say that he is gradually getting back on the air. He sends his regards to all his mates down south.

## VICTORIA

Eric, L3042 is in direct contact with CY2BBS (Cube) by mail and can pass any S.W.L. reports to him at any time. He is sending all QSL cards for VK direct to him for distribution. A rare QSL received in the form of one from W5YTH Mobile # because it is for a temporary mailing, etc. Eric, on a recent trip in his car, when Eric heard him was near Chicago on his way home. Other QSLs to hand: CO2, FO2, KM6, K4P, KV4, MP4, UP4, UP5, UL7, UH2, VQ1, YN1, 4U1, etc. Plenty more, but have space trouble, sorry Eric.

Lloyd, LS141 Sorry to hear that the wind played such havoc with your antenna, and also of your QRM problems. Thanks for the copy of the DX ladder. I am very good indeed. I shall return it as at a later date.

From the Black Rock boy, Greg, LS138, comes the usual compact letter which contains plenty of activity, plus the result of the V.F.L. final, ha! it's a pity they don't play the N.S.W. relay down there. Greg, I am sure the Editor. Latest QSLs received: OZ2, UAN, UA9, ZS4, FO2, G3, VSL, MP4, YV5, etc. whilst here covers quite a nice variety.

Drew Diamond, another keen lad who uses a shortwave with a half wave dipole, up some 20 ft. There was a very impressive list of DX received. I was very pleased to hear from you.

Addison, L3071 is a s.w.b. listener and sent quite a long list of stations received on those bands.

## QUEENSLAND

From the Brisbane bushman, Lew, L4039, comes a photo of one of his catches of some really big fish. Quite a handsome trio: the two fish and the angler, his recent legs: JA, KWE, XE, W6s and Ks.

Charlie, LS005 has sent me particulars of the Central Hunter Club which I will include in the article on awards in the near future. Congrats on being the first S.W.L. Oceania member of the above club, and thanks for your nice remarks.

Thanks to A. Robson, of Rockhampton, and K. Reis, of Toowomba, for their letters. I hope the printed matter was of interest.

## SOUTH AUSTRALIA

Last month I was pleased to add another name to the L.S. list. This month is my pleasure to add yet one more, and trust as always goes to you for your assistance. A welcome to the page goes to Tim Corbin, LS007, who is hoping to gain a rung on the DX Ladder very soon. His first DX: KL7, HCl, ZET, VR and WA. Not to be start off.

Also, LS009, continues on gaining the L.S. section of the M.F.D. Contest. I hope that good tally in the R.D. brings you another first. OK on getting ready for the v.h.f. season. I think you will like those bands.

Brian, LS001 I must apologize, as I have mislaid your letter and naturally cannot make any comments.

## WESTERN AUSTRALIA

From the lone LS, Peter, L3063, comes the usual interesting report. This month Peter received 130 cards, in which were 14 new countries. This puts him in second place on the Ladder. Also to hand is the R.S.G.B. 21-35 Mc. award which he won in 1953, nice going Peter.

Congratulations to L3242, L3128 and L5048 for their respective wins in the Ross Hall V.H.F. Contest, 1963-64.

That's it for this month, chaps. Cheers, thanks to Tim and the members who have helped to make this page possible. 73, L2211.

## S.W.L. DX LADDER

	Counties	Zones	W	Conf.	Brd.	Conf.	States
E. Trebilcock	306	265	60	58			
P. Drew	135	341	54	36			
D. Grantley	130	361	35	35			
M. McMillan	45	170	21	14			
M. Hilliard	80	241	23	14			
M. Cox	54	238	20	21			
G. Karl	68	150	31	7			
C. Abernethy	62	104	33	14			
M. McMillan	50	172	21	14			
L. James	51	144	24	18			
L. Thomas	42	130	20	14			
R. Beckley	27	90	18	15			
A. Hafferty	21	128	18	3			
R. Gats	9	26	8	—			

# Publications Committee

## Reports . . .

The Publications Committee reports that all inwards Divisional notes, etc. received at P.O. Box 36, up to the evening of the 12th October have been published in this issue of "A.R."

In addition correspondence was received from VKs 2PL, 4NS, 3LK and 3VB, and Technical Articles came from VKs 1AU, 6DR, 8JT and 2XK.

A matter from VK1AVA was referred to the Victorian Division Council for decision regarding policy.

The Committee discussed the publication of a "History of Communication" from J. R. Con and agreed it should appear in serial form in "A.R." as soon as possible. Proofs for the "A.R." Board have been forwarded to the M.G.C. for authorisation to publish and it is anticipated that the new edition should be available late in November. As already explained, the late publication date was due to negotiations with the P.M.G. and next year the "Call Book" will be issued in June-July.

Mr. Bill Ross is welcome to the Committee and will act as technical article reader and v.h.f. adviser.

The question of publishing the Christmas issues of "A.R." was discussed and the view of the holiday period shut-down at the printers the following will be publication and issues date —

**DECEMBER 1964.** Copy required by 8th December for release on the 1st December.

**JANUARY 1965.** Copy required by 1st December for release late December or early January 1965.

**FEBRUARY 1965.** Due to the fact that this issue will be set up during December 1964 for issue in mid February 1965, it will not be possible to publish any Divisional Notes, WSL, VHF, DX Notes, etc. nor the Handbook. All material is **ONLY** to this issue. Accordingly, the February issue will be devoted to technical articles.

All readers are particularly requested to note the above changes in the issue of "A.R." for 1965.

Finance of "A.R." was discussed and it was agreed to maintain the current budget which may show a slight deficit for the year.

No "A.R." wrappers were returned from the October issue, hence the Committee can only consider those wrapped up and postage paid addressed. Members of the W.I.A. should notify their Divisional Secretary of any change of address. Direct subscribers should write to the Admin. Secretary, W.I.A., C/O, P.O. Box 36, Melbourne, Vic. All members of the W.I.A. must notify the P.M.G. of any change of address of their transmitting station, in addition "A.R." should also be advised.

Correspondents are again advised that ALL matters pertaining to "A.R." should be addressed only to P.O. Box 36, East Melbourne, C.S. Vic.



## SUNSPOT ACTIVITY

(or lack of it)

We should all know that a "Zurich Sunspot Number" is an indication of the degree of sunspot activity. We should also know that at present sunspot numbers are near rock-bottom, so as to speak—and because of such a situation, the ionospheric layers are far from dense, and hence world-wide radio contacts are relatively few.

How many of you readers are aware that the Zurich Sunspot mean number (daily) for August 1964 was 200, for August 1961, 52 and for August 1964, 87 (Analyses it for yourself and recollect the 1958 feeling, or you new-comers imagine what it must have felt like in 1958!)

The "experts" are now forecasting that December 1964 could well be the current sunspot minima month—after that there will be a slow climb back towards (we hope) the 1958 maximum level (and the good old DX days).

—Eric Trebilcock (WIA-L3062)



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up. Fiat supported under a monstrous whip did some mobile working on this band. You won't believe it, but Frank says it'll be even better next year.

Thanks to all who helped, especially Kevin, Norm, Chris, Bill, Varley and any others I've missed—you're the chaps who made it what it was.

It seems that that little bit has taken up all the space that Ron. Editor will allow, so it remains only for me to say that you must not miss the next meeting, November 6, at the R.A.F. and the place is room 1 in the R.A.F. block at the Flight Tech. We are to be treated to an unusual and most revealing lecture on Microminituarisation, to be given by Col. H. J. Tricot, head of the Military Products Division of A.W.A. He is bringing news worth hearing to show the public that we will be the first showing to the public in Australia what we are told. So don't miss it, whatever you do. We start at 8 p.m.

I'm a bit unhappy really. All these lucky chaps on holidays, Bill JXT in Japan, Lance SCB here, the others overseas and the like, I suppose I couldn't say the other ones, still I suppose there are compensations, I'll not miss the meeting. By the way, did you know that our Arlie has a new name—ask him. And the two of us members are waiting for a letter from the A.W.A. on the same iniations branch. Best of luck chaps. 72, ZAKW.

## VICTORIA

### WESTERN ZONE

Quite a nice gathering took place in W.Hill on Sunday, 27th September, when we held our Annual Convention. About 35 members and their families braved the rather wintry conditions. We were sorry to learn because of the Syring weather the flying groups of the South Western Zone were unable to be with us. However, we will order a day to suit next year. Don, XYL and party.

Officers elected for following year were: President, J. W. Edmonds, ZAFU; Vice-President, J. D. Giltinan, ZAFU; Secretary, SATE; Sec. and Treas., W. J. Kinnsell, ZAKW; re-elected. A special committee was formed to organise W.I.C.E.N. activities. They are ZAFU (Clear Lake), ZAKW (Lubeck), ZADE (Glenorchy), ZAOG (Taslegatuk), ZATE (Birchip).

The a.s.b. chappies seem to be the most active. Harry ZKX is now testing out a super quad with encouraging results. External Chat, VRIB, at present in the Gilbert Islands, is heard quite often on the DX bands and I believe will be back this way towards

the end of next year. Merv, ZAFU and family have just returned after their holidays which they spent touring Mildura and Canberra areas. 72, ZAKW.

## QUEENSLAND

Last month things were very quiet on the home front, now wise. Therefore, I think it is about time that I declare this advertisement month. If you are intrigued, then the following is aimed at those who are unable to make the Sunday morning news broadcast from 4W1. With the exception of Queen's progress, it is necessary that this Division progresses also. The VK4 Division does not intend to stand still however. With this in mind, we solicit all interested persons to join our ranks. If so inclined, contact your QTH inquiring about Amateur Radio, then invite him to become a member of the W.I.A.

You may wonder why news of your particular district does not come over 4W1 and you may think we are biased about your location. This is not so. The only reason why we do not put your district's news on the air is that no one in your area can be bothered to send any news to us for broadcast. We welcome news, both personal and general, about the Amateur Radio Clubs, etc. from all parts of the State.

Therefore all clubs take note! Get your public relations officer to send us the news from your club. In fact, anyone is welcome to do so. If you have a paper, send it to Box 627, G.P.O., Brisbane. It will be broadcast.

It was inadvertently stated in the September edition of "A.R." that the call sign 4WQB went to the Bundaberg Amateur Radio Club. I am sorry to say that the statement is untrue. The stepdown should have read 4WQD. 4WQD is the official call sign of the Wireless Institute of Australia's "Wide Bay and Burnett Branch" and that the station is situated at the club rooms of the Bundaberg Amateur Radio Club. I hope this is all correct now. Anyway, the station been heard yet? Notes from "Wide Bay give it no mention this month.

Now for a pat on the back! During the last six months, something like fifty thousand wireless amateurs have joined the W.I.A. Fairly obviously, Queensland Amateurs have been active, but there is always the feeling of some that the bands could be used even more.

Well I hope you didn't mind those direct broadsides, but they have to be said every now and then if this Division is to keep to its policy of progress.

### YOUTH RADIO CLUBS

Discussions with a number of science teachers during a station visitation to the University of Queensland allowed a lot of publicity to be given to the Youth Radio Scheme. It seems that the Pomona Rural School, under the guidance of Garth Baker, will form a club. Frank Mitchell, from the Mount Isa High, and Ken Keith from Redcliffe High is at long last getting into the picture. Other possibilities that we have heard of include Yeronga State High, Gympie Christian Brothers, and a G.P.S. School, Toowong.

Cairns High is going along very quietly and it is being said that they are going to come on with a few hundred watts of s.s.b. what say you Alex? Big news of the month is 4PZ, a College. They have been in contact with W1I during the month and then they worked the other two licensed youth radio clubs, 4RP and 4DS. At the time of writing, a Y.R.B. morse contest was in view. Club champion from the schools will probably compete against one another to find the VK4 champion. Both under 15 and over 15 divisions will be contested.

Specimen papers for junior certificates are in the process of duplication and Harry 4ZNG should be able to puzzle the kids at Gympie by now. A completely new set of conditions for the elementary and other awards has also arrived. Before leaving this subject, we wish to state in print that the VK4 Division has been very lucky in finding a young radio organiser such as Charlie 4UC. He has applied himself wholeheartedly to the job of interesting schools in the scheme and the results he has achieved in such a short time are truly startling. Come on the game world! Charlie is hoping that by this time next year, your list of clubs will have increased fourfold at least.

Perhaps if our hopes are realised we will no longer be discussing the A.R.W. in particular, but rather the co-ment or co-ment bonding mechanism exhibited by ammonium bi-fluoride.

### GENERAL NEWS

Recently Alf 4OL, who is the voice behind 4W1, took his annual holidays. The trans-

missions on Sunday mornings were made from a number of stations during the time Alf was away. We wish to thank these stations for making themselves available and we hope that the news was heard at your QTH at its usual strength. Alf has taken on a new job and this will allow him to work around the clock for a change. We will probably be able to attend the monthly meetings since he will now be working during the daylight hours and not at night as previously.

Technical difficulties were experienced with the production of "QTC" for September. This is another way of saying that the typewriter for the cutting of the stencils refused to operate satisfactorily. As the production of "QTC" is a voluntary effort, some delay was inevitable.

The September general meeting was not well attended due to the fact that "QTC" had not been published. Even the lecturer for the evening did not arrive. Improptu lecturers were drawn from the body of the meeting. Mr. Rodger, a man with a good knowledge with Q multipliers and the like. 4PZ had an interesting discussion on transformerless power supplies. Paul again arose and warned of the hazards of using such a design. Claude 4UX was present at the meeting and gave details of activity of the northern boys. 72, 4ZBD.

## SOUTH AUSTRALIA

The monthly general meeting of the VK5 Division for September was held as usual in the club rooms to a well-below average gathering of members and visitors, with the lecturer for the evening being Rob 4ZC. Rob had been called upon at very short notice to fill in for the night, but came along armed with copious notes on the subject plus a wealth of practical knowledge of the faults and the like of various locations and call signs. Fortunately for me, he started off almost immediately with chalk and blackboard, naturally letting me out of any further cover of the lecture, for which I thank him sincerely. All in all, can say is that judgment was my first attention of the present, and the nature of the questions asked at the end of his talk, he achieved his object, that of giving us all something to think about, and the people to make it possible for Amateurs to live with others in Australia in peace and contentment and thus open up larger segments of the bands for operation by these same nearby Amateurs.

The vote of thanks to the lecturer was ably, and some interesting points given by Glyn 5OK, and the applause was again sufficient indication of the good job performed by Rob. For some strange reason, known only to the powers that be, the meeting was closed at the conclusion of smoke-off without any of the usual business side of the meeting being held, either Federal or General, despite the vocal objections of grumpy old Persons 5ZG, who was amably disposed of by the President. Paul 4ZB, in his desire to see the enjoyment and satisfaction of all in the meeting, I should care, at least I got it into the minutes. I think.

Noticed the Rev. White, from the Central Methodist Mission, present at the meeting as a guest. Also noted that he was an associate member later on. I checked up with him during smoke-off as to his reasons for joining so late in life. He told me that he is now somewhat semi-retired and has taken up the hobby of amateur radio. A hobby that he has always wished to participate in but up till now has never had the time to fully enjoy. He is to be congratulated on his decision, and who knows, one day in the future he might have his own call sign although when I suggested this to him he modestly thought not.

Understand that Joe 5JT is playing around with reduced size antennae, with particular emphasis on 40M. He has built quite a few on a stick but is as likely as not to be the first to admit that he never should have climbed up that beam at his age. Nice to hear about you Joe.

Also heard that Pat 5KM, from Victor Harbour, is interested in the Swiss Quad.

## TECHNICAL ARTICLES

Readers are requested to submit articles for publication in "A.R." in particular constructional articles, photographs of stations and gear, together with articles suitable for beginners, are required.

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nature of which I am in complete ignorance. Swiss cheese by all means, but Swiss Quads, well I ask you?

Gilbert MGK brazenly admitted at the meeting that he had recently attended a lecture at the Police Station due to a charge relating to a misunderstanding with the Police radar. Take yourself in hand Gilbert, what with eating double ice cream in the main street of Kingcote and now in the clutches of the cops you are becoming a little devil. Latest report comes from the southern suburbs tell of Leith SLG running amuck with a lawn mower in the back garden the other day and cutting up his beam control cable. Heard him tell Uncle Tom (ETL) of the incident on the air and also hoping that they may not be listening in. Well I was, see, and I did not have any cotton wool in my ears like all of your neighbours did, ten seconds after the beam cable finished in the grass catcher. Tuttu!

George 3OG, Garry 3ZK and Gilbert MGK heard cutting themselves a piece of the DX that bobbed up in twenty recently. Gilbert got 20 over 8 from Liverpool in one contact, but think it is the memory of him to point out to me with an obvious sneer, that all three were on a.s.b. Pooch to you!!

With all this talk of DX on 20 marr around, I was somewhat taken aback to hear George 3RX say that he had not been doing much on the air as he had been gardening of late. DX around and George gardening. This I have to say.

In my long association with Amateur Radio as a hobby I have had a number of disappointments, such as, when they took my coherent receiver away when they made me put a low power phone, when they made me put filters in my power supply, to name a few. These little upsets of course I managed to take in my stride, but last month fate dealt me a blow below the belt, or should I say a blow above the belt, when I had to give up the discovery that in VK5 we are sheltering a renegade, yes sir, a deserter to the cause. I could hardly believe my eyes. There I was in black and white, the western zone sub editor, none other than Harry 3YR, had to cap it all, having a shot at me to boot. To think this could happen to me, a VK5 writing for the VK5s, and from all appearances enjoying it too! Just goes to show to what lengths they will go up to, just to get a mif!

Talking of other Divisional subeditors, and who in the world would want to talk of other sub-editors? I notice upon reading the VK4 general news, that there is an "anonymous" note which purports to come from some real form and fill in VK5Z. Just sign his name. Well, how would you be? Don't some people get it easy, no wonder they can't grow a straight banana up there!

Received a welcome letter from my espionage in the South East, unfortunately a little late for last month's notes but still welcome news all the same. In it he tells me that the most notable achievement of recent date is that they had a 100 per cent. participation from the VK5s in the VK4 contest. Mr. Gribble for the N.D. Contest, Lee 3QJ and John 3JA blew the dust off their gear and worked 10 stations each, and Claude 3CN, Eric 3NU, Stuart 3MNS and Col 3CZ also participated to help increase the score for VK4. There was an entry in the VK5 side of the game. Col 3EZER managed to work five stations on 80 Mega and above, and finished up with 55 points for the five contacts. My spy thinks that this is probably the first time that this has happened, and I am sure he also tells me that the 80 m broadcast from SWL continue to be 5/9 in Mount Gambier.

Arriving home from toll the other Saturday evening, I had just turned the corner when I noticed, with some trepidation, a somewhat familiar motor car with a familiar number plate. Now the right side of Victoria never pise at any time is enough to give me an attack of the trembles, but this car seemed too familiar for even an attack of the trembles to be enough to meet the situation. Sure enough, when I lifted the foot of the tent, who should be sitting on my best and most comfortable packing case, none other than the new Assistant Editor of "A.R.", that purveyor of malicious gossips concerning me in the magazine that I read—that's right—was me. I never gets me anywhere, none other than Ken 3AJF. Working on the old Arabian proverb that it is better to kiss the hand that one cannot bite, I greeted him with some reserve after taking down the hurricane lamp. It took me a week or so to remove the black smoke marks from the glass (what's wrong with these VK5s, don't they ever practise economy?), anyway, as I said, I greeted him with some reserve, and we finished up having quite a nice chat, and made radio plans, split salt with us. He was off next day to Port Augusta, and was to return to Adelaide

on the Monday, and promised to spill some more salt at our table on that day. I have not heard or seen anything of him since that date and can only assume, and hope, that my smoke signals to the chief of the Stumpoys were received loud and clear and if so, then no longer will I have to bother about kissing hands that I cannot bite. Did he get back home Joan?

The Woomera Amateur Radio Club recently held its 10th annual general meeting to a very good attendance. Gathering of members, and the following officers were elected: President, J. Mount, 3EV; Secretary, D. Avard, 3OF; Treasurer, J. Pepper; Council members, Ian Hunt, 3QX and T. Mitchell, 3TH. The QSL Manager, G. Alcock; Technical Officer, G. Wheeler, 3BV and last but by no means least, the Publicity Officer is T. Mitchell, 3TH.

It goes without saying that due to the floating population aspect of Woomera, the turnover of members is fairly high, but the average membership is around the mark. The average member attends on most Friday evenings at the club rooms at which experience (and enjoyment) is gained by the non-licensed members in the art of radio operating, plus plenty of discussion centred on the techniques of Amateur Radio, etc.

The club has appointed the licensed members to a roaster system for the monitoring of the Sunday morning broadcasts of SWL and also for call-backs when SWL will be kept on the air until lunch time, and naturally contacts will be appreciated from all directions of the compass.

It will be seen from this brief report that Friday and Sunday constitutes the bulk of the club activities on the air, and the licensed members will choose other times for their own DX work. Now comes the point to SWC and give the boys that chance of a contact with the outside world, also the chance for the beginners to see just what makes Amateur Radio tick. Thanks for the notes from 3TH, they may be all nonsense and no one knows, you never will qualify for one of those mythical noughts that are reputed to be thrown about with reckless abandon by the Publications Committee.

Bumped into Norm Coltrman the other day. After picking myself up, I could not but observe that he was still looking rather pale. He had a little gland trouble over the past year or so, which has somewhat slowed him down, but with a little dieting, plenty of attention from the XYL to say nothing of a little slow-trotting in the sun, he is on the mend. The North East, and all is now well. He still flatters me—his closing remarks as we parted were: "I was reading your notes in the magazine and I fell asleep before I could finish them!" Thank you for those kind words, Sir.

Joe 3JO (ex-SQ) is now married and has a home for his parent that he had received from SPU who is at the moment in America from all appearances, thoroughly enjoying himself. At the moment of writing he and his family had just returned from a motor tour of the West Coast. Joe's wife however sadly reports that he did not see one Ham antenna, mainly due to there being so many TV. antennae in the sky that he could not see the trees for the wood, or something like that! However, he did not, lost because he did not see plenty of cars on the right with halos and whips, complete with call signs for number plates, although none of them seemed to stop just where he did. He mentioned how sorry he was to hear of the passing of Len 3SL and also wanted to be remembered to all of the VK5 gang. No mention of when he is returning, but he is coming back via England and the Middle East. Thanks, Joe, letter much appreciated. T3. Bob 3YV.

It is true that the VK1 correspondent for the Youths Club activity now treats me with ignore since he has discovered Bob 3OD. Can't help but observe the different approach in his writings. Did he ever ask me for some news, and if so, if we are friends? No sir, all he ever did to me was to try and shoot me down in flames! How are you Ken? Are we still buddies?

You notice Mr. Wilson (4BW)—we are not on christian names—when you trying to put himself in for "sun" with Muriel 3AIA in his notes last month? How cheeky can they get? If there are any "cuppas" going from that bevy of beauty, Muriel 3AIA, Morn 3AXS, Her 3AKK and Verle 2MM, then I am sure that the first time that my hand will be holding the cup, won't I gizit Shush-h-h-h, not too loud, they might hear you!

No news lately of that old VK5 veteran Super 3ZK, SDA, to say nothing of his activities from several other sources, was asking after you Ruge. What about a couple of lines some time?

It was good to hear at the meeting, in the new members' list, the names of several of the older ex-members who had decided to renew their subs. This is to the good, after several years absence from the Divisional scene. Quite a number of old members who have let their subs go for various reasons would probably join again with a little gentle nudging. Don't let that joining fee bother you. I would hate to hold out a membership card to you, Mr. T. (Harry SMY).

About a year or so ago, any time that one listened on 7 Mc, in the early afternoons, from the University Amateur Radio Club, or the Friends Amateur Radio Club (3PZ) seemed to be the only VK5 stations on the air consistently at that time. These days it would be a novelty if either station was heard on at all. Fifty in a way, I suppose, it is the old school days of the VK5s. The driving force, joining fees or any other such simple by-laws is never worry him. His telephone number is 53-3121, and he is not too proud to sign you up.

About a year or so ago, any time that one listened on 7 Mc, in the early afternoons, from the University Amateur Radio Club, or the Friends Amateur Radio Club (3PZ) seemed to be the only VK5 stations on the air consistently at that time. These days it would be a novelty if either station was heard on at all. Fifty in a way, I suppose, it is the old school days of the VK5s. The driving force,

move on and the driving force is gone.

Thought the photo of Al 3ZC on the September cover of the magazine was a good one, the fact that it was a VK5 might have biased me a little. What's that? There is only one photo in the whole magazine, I mean, it shows one girl and two boys, please yourself. Naturally living up to my name of a "Paddie", I prefer to use the extra letter. However, getting back to my subject, I had a look through some of my best photographs with the idea of finding one to the magazine in the hope of making the front cover. I picked a beauty—one of my best poses—unfortunately my XYL tells me that a picture of me laying on my tummy in an outsize inasmuch as my legs are kickin' about. I would not have much appeal. A pity, I had such a ducky blue ribbon around my chubby neck too!!

This month has been a bad month for news and description. The band is extra quiet, my garage work hours have all been discontinued and my new working hours make listening almost impossible. However, just as I was going to put these notes to bed, along came "Info", the official journal of the Elizabeth Amateur Radio Club (3AF) from which, with out any computation whatsoever, I pirate this last page of notes!

Bill 3WV is tinkering with the idea of giving a.s.b. a trial, and is at the moment of writing gathering the bits and pieces together in preparation. Clive 3PZ, Bill 3VE and Ted 3EZ have been added. 3WV and 3M are share-hated spy adda, "keeping their hands in no doubt". Angus 3ZB is busy racking around the doings and is conspicuous by his absence. What is he doing? Do you mean to tell me that you don't have a dog? Well, you don't know what a dog is? Well, well, well. What I am sure can one be. Do I know what a dog is? Haw-haw-haw! No I don't!!

John 3QJ (ex-SQ) is now domiciled in Canberra and appears quite keen on the club activities over there. Watch out for that Ken 3ME. He thinks all VK5s are like me, John.

Ian 3IK likes to be in the VK5s, no real humour goes with him. His sympathy is extended to your OM, it is bad enough having them loitering on our border, let alone having to live with them. Keep away from Pincott 3AF. He bites.

Bob 3YV is still reported as having almost given the game away and this assertion is being made much too frequent for my peace of mind. What about a statement OM? I am still prepared at the continuation of the news that I intend to write personally. Watch for an unstamped envelope.

Well, this is it, at last the end. But before I close, I must tell you of one of the safety slogans that my source of income received for a slogan contest not long ago. It went like this: "Don't smoke in bed—the sleeping bag you burn—may be your wife." Sit down to my sweetness, not you! T3 do 3PS. PanSy to you.

## WESTERN AUSTRALIA

This month we have had one contest, the 80 mxx scramble which was quite a success with a number of stations taking part. It was a pity however that more did not take part as obviously many were just listening. The swap over to 80 in lieu of 40 was a move in the right direction with propagation being

It is true that two of our members went over to Mervin MacLean to attend the Communications Course and their reports were very good. It would appear, however, that the Establishment may not be very sound as one of them

sweat that the walls and mirror were moving one night. This could have been caused by something else however.

Activity on the various bands is very patchy, but one can hear quite a number of signals on 10 most evenings. The weather is changing however, with the approach of summer and its problems for this band. Twenty metres has been coming to life in the evenings of late, with signals coming from Europe and India. American signals have also been coming in quantity.

Any country member who may have an item to be submitted for the agenda at next year's Federal Convention should submit it

as early as possible so that it can be processed and ready early. This does not only apply to country members, but also to any members.

Once again this month information has been very scarce, and I would very much appreciate anything of interest being passed on to me. I believe that if anyone would like a demonstration of the cornering ability of a Freeway, they should try Geraldton for a likely place. However, we could suggest that you use a different site than the one used by one of the members already.

Bernie SKJ was travelling up to Perth and was using his Swan mobile and the signal on 80 was excellent. I believe many more Amateurs have or are building up mobile gear and we should hear more mobile signals in the future.

Your Council will be very pleased to receive any suggestions which you may put forward, if you have any complaints we would like to hear them.

This seems to be all for now, chaps. so till next month, 72. Roy SHY.

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## TASMANIA

It is strange how little information a scribe starts out with when writing for this column this month. I may have written a few months QSO via 600 ohms with a certain person who seems to keep his ears open all the time. I think I've just got enough to make a showing.

Out of a few well known call signs have been heard on the air of late, some of them after quite considerable periods of silence. Bob YOM is back from VK4 after an absence of about 18 weeks. "Up there to work," as he said, but I hope he has got a new antenna and got another "long time no hear" signal is from Brian TBB, who I am told is back on specifically for the Jamboree, but we're hoping he will continue to be heard not infrequently even after the said Jamboree.

Another one is Kevin YD whose signal at my QTH is in keeping with his physique—believe he has his shack finished now, so should hear more of him now.

Crofty YCW has not been sighted at the time of writing, but if he is going to reappear he should be home in about a week from now—probably got himself so much new gear they will send him on a special flight.

I've noticed on the round-up after the Sun-often broadcast that the various offices often has to ask for a repeat call from some other band station that haven't quite given him time to switch the product detector in, so what about a little longer call you side-bander.

After quite a few weeks of trying a sure path has been found by Eddie ZBBM out of Tassie into Hobart on 2 mx, been getting 8 by 8 to 9 reports both ways, good work Eddie. Hope to work you myself soon.

Notice the Northern Tasmanian President DENNY JDK has got a heard word on all this. Don't know as yet whether he is using it on v.h.f. or not. Knowing DENNY, I reckon he'll try it this coming season.

Incidentally, it's planned to have quite an active Jamboree—as in American terms the Hamfest this year. Proceeds for the LTU fund. So start looking out suitable items the other fellow might like to buy, and you're willing to donate! 73, Geoff YZAS.

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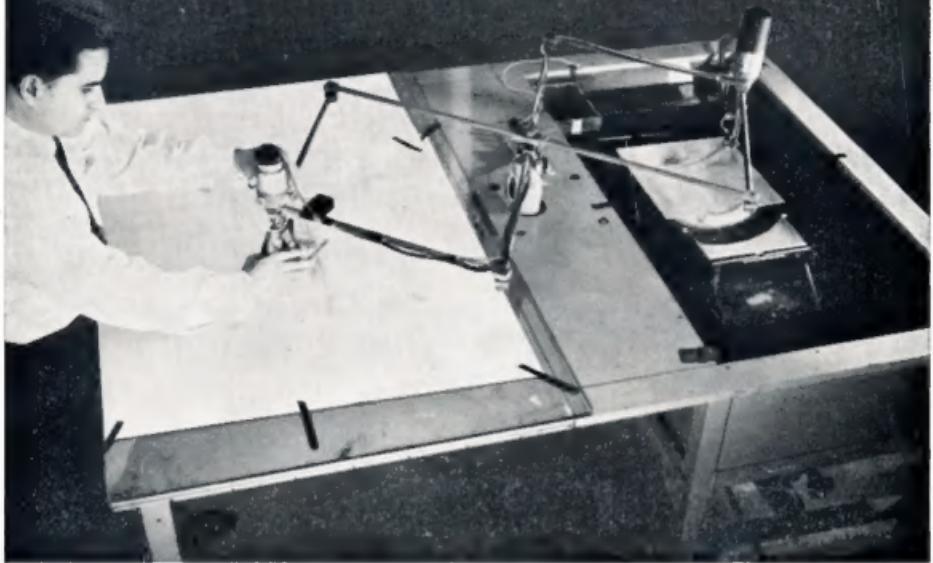
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